R e m a r k s

The present application is a continuation of application Serial No. 08/904,855, filed on August 1, 1997. The specification has been amended to reflect such a priority claim. It has also been amended to correct typographical errors. Marked-up copies of pages 1, 13, 20 and 31 of the specification reflecting the amendments are enclosed. In addition, Figs. 14, 16 and 18 have been amended to correct typographical errors. Accordingly, marked-up copies of these figures with corrections in red are enclosed, along with a Letter to the Official Draftsperson.
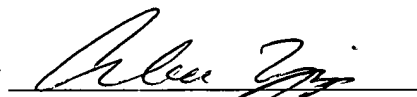
Applicant has cancelled claims 1-20. Claims 21-58 have been added which are drawn to various aspects of the invention. It is respectfully submitted that the claims, as added, are patentable over the cited art in the parent application including U.S. Patent No. 6,006,161 issued to Katou.

In addition, applicant brings to the Examiner's attention the references listed on the attached Form PTO-1449 (12 pages). Pursuant to 37 C.F.R. 1.98(d), copies of these references are not enclosed as they were previously cited by or transmitted to the U.S. Patent and Trademark Office in the parent application identified above. It is respectfully requested that the listed references be made of record in the present application.

Respectfully,

Michael L. Obradovich

By _____
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212-836-7363

Date: April 19, 2001
Enclosures

CENTRALIZED CONTROL AND
MANAGEMENT SYSTEM FOR AUTOMOBILES

This application is a continuation of application Serial No. 08/904,855, filed on August 1, 1997.

Statement of Related Applications

The present application is related to ~~copending,~~ commonly assigned U.S. Patent ~~Application Serial~~ No. 6,009,355 ~~08/789,934, entitled "Multimedia Information and Control System for Automobiles."~~

Field of the Invention

The invention relates generally to control and management systems and, more particularly, to a system for use in an automobile which facilitates the user's control and management of various vehicle functions.

Background of the Invention

The concept of an automated highway system (AHS) has been fervently pursued. Although the interpretation of the AHS concept varies from one person to another, people implementing the concept are incorporating more and more technology into an automobile to improve its operations, better its safety measures, and add conveniences to the vehicle user.

A prevalent interpretation of the AHS concept is hands-free driving. To that end, magnets have been buried along an experimental automated highway, and automobiles have been equipped with magnetometers to sense the magnets to guide the moving vehicles, thereby obviating manual steering. In another approach, an automobile is equipped with a video system in which cameras monitor different segments of the road ahead and feed images to on-board computers that control steering, acceleration and braking of the vehicle.

detected by processor 103, the user is elicited for
information concerning the destination, any intermediate
stops, etc. Such elicitation is realized by posing
questions on display 205 and/or by uttering those questions

5   using a synthesized voice through an audio output. The user
then provides verbal responses thereto through an audio
input. Relying on standard speech recognition circuitry in
system 100, navigation system 329 recognizes and registers
the responses. Using stored map information, system 329

10   then provides on display 205 a suggested route leading to
the destination. Furthermore, based on the knowledge of the
vehicle's instantaneous speeds and directions, system 329 is
capable of verbally and visually directing the user to the
destination.

15   Because of the limited capacity of the storage for
the map information or because the map information needs to
be updated from time to time, it will be appreciated that
system 329 would instead obtain the necessary, latest map
information from an on-line service through a cellular or

20   wireless connection.
         In addition to directing the user to a given
destination, system 329 through processor 103 cooperates
with weather system 332 and traffic system 336 to be
described. In accordance with an aspect of the invention,

25   systems 332 and 336 jointly provide ~~provides~~ on display 205 updates
regarding traffic congestions ~~congestion~~, weather conditions, hazards,
highway warnings along the route suggested by system 329.
         Fig. 6 illustrates one such navigation screen on
display 205. On this screen, indicator 450 marks the

30   current position of the vehicle. The suggested route (shown
in boldface) by navigation system 329 is numerically denoted
453. Traffic indicator 455 is provided by system 336 to

complete stop, automatic parking routine 500 stored in
memory 107 is invoked. When instructed by this routine,
which is depicted in Fig. 9, processor 103 causes display
205 to show thereon the positions of the surrounding objects
5   relative to the subject vehicle, as indicated at step 543.

At this point, the user may touch the screen of
display 205 to define a parking space into which the vehicle
is to be parked. In order to carry out parallel parking
effectively, this parking space needs to be reasonably
10   suitable for the vehicle to be maneuvered into. Processor
103 at step 547 computes the coordinates defining the
selected parking space. Knowing the respective coordinates
of the subject vehicle, the surrounding objects and the
parking space, processor 103 at step 551 determines the
15   instants at which and extents to which the vehicle is to be
accelerated and decelerated in the course of the parking, and
at step 553 the instants at which and extents to which the
steering wheel is to be turned and returned. At step 555,
processor 103 causes a computer simulation to be performed
20   using the speed and steering parameters just determined to
verify that the automatic parking is feasible, without
running into any surrounding objects. At that point, the
user may depress ANIMATION key 219j to view on display 205
the simulation in which the subject vehicle moves into the
25   user defined parking space in an animated fashion. At step
559 processor 103 determines whether the vehicle can be
properly parked under the above conditions. If processor
103 determines that the automatic parking is unrealizable,
processor 103 informs the user of same, as indicated at step
30   563. In response, the user needs to select another parking
space or may attempt to park the vehicle manually.

Otherwise if processor 103 determines that the

window, respectively. Indicators 821, 823, 825 and 827 on
the hypotenuses of the respective triangles indicate the
extents to which the corresponding windows are open. The
user may touch the indicator on the screen to raise (or

5   lower) it along the hypotenuse. In response, processor 103
causes access control subsystem 139 to close (or open) the
window accordingly. Alternatively, the user may operate
indicator device 227 or 229 to point at one of the
indicators and drag same along the hypotenuse to control the

10   corresponding window opening.

In addition, a SMART WINDOWS function on sub-
screen 840 may be selected by touching ON option 842 on the
screen or pointing and clicking at same. With the SMART
WINDOWS function selected, for example, subsystem 139 causes

15   the windows to be ~~completed~~ _Completely_ closed upon a shut-off of the
engine or an activation of air conditioning. When coupled
with a SMART CLIMATE function to be described, the SMART
WINDOWS function includes slightly opening selected windows
to vent out excess heat prior to the user's arrival, thereby

20   pre-conditioning the vehicle. In addition, when an AUTO
function on sub-screen 840 is selected, the user can specify
the vehicle speed at which the driver side front window is
made completely open or closed. By touching on the screen,
or pointing and clicking at blank 845 or blank 850, choices

25   of speed are listed beneath the blank. For example, by
selecting a zero speed for blank 845 ahead of a toll plaza,
the window in question would be completely opened when the
vehicle stops at a toll booth, thereby conveniently allowing
the user to pay tolls.

30   The screen of Fig. 13 may also be invoked by
depressing DOORS key 232b. Flaps 851, 853, 855 and 857 in
Fig. 13 correspond to the driver side front door, driver